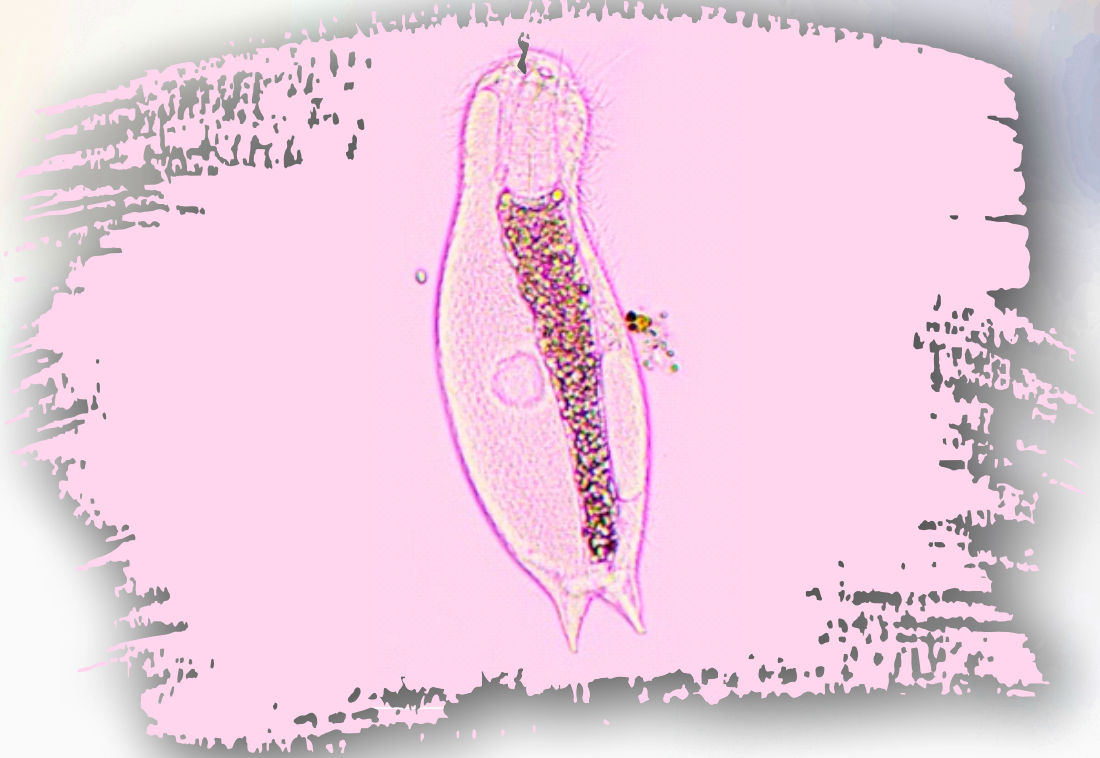


# FAUNA OF INDIA CHECKLIST

JULY, 2024

ONLINE VERSION 1.0



## GASTROTRICHA

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**Key words:** Chaetonotida, checklist, Gastrotrichs, India, Macrotrichida

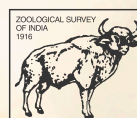
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**ZOOLOGICAL SURVEY OF INDIA**  
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**Introduction :** The phylum Gastrotricha is divided into two orders, Macrotrichida, which contain mostly marine or estuarine species and Chaetonotida, which contain freshwater species. The free-living micro-invertebrate gastrotrichs are found in a variety of environments ranging from marine to freshwater habitats around the world (Minowa and Garraffoni, 2021) even in the soil (Bharti and Kumar, 2019). The documentations of Gastrotrichs in India are very less and the reported species are mainly from marine environments, which are classified under the Order Macrotrichida (Annandale, 1907; Naidu, 1962; Visvesvara, 1963; Dhanapathi, 1976; Sharma and Sharma, 1987; Naidu and Rao, 2004; Harkal and Mokashe, 2013; Bharti and Kumar, 2019; Chatterjee *et al.*, 2019).

**Global diversity :** According to Todaro *et al.* (2019), a total of 860 species globally has been documented.

**Diversity in India :** According to Sharma (1990), the number of gastrotrich species in India is 100, out of which 24 species is belonging to fresh water community. Recently, Bharti and Kumar (2019) found one gastrotrich species from soil sample of Mahananda Wildlife Sanctuary, West Bengal. However, it is to be noted that a number of gastrotrich species should be excluded from Indian fauna due to cases of misidentification and species lumping (Chatterjee *et al.*, 2019). The current list contains 85 species of gastrotrichs belonging to 28genera and 10families in 2 orders.

## Diversity in States

Sl.No.	State/Union Territory	No. Species	No. Endemic Species
1	Andhra Pradesh	40	4
2	Arunachal Pradesh	2	0
3	Assam	3	0
4	Bihar	0	0
5	Chhattisgarh	0	0
6	Gujarat	3	0
7	Goa	3	0
8	Haryana	0	0
9	Himachal Pradesh	0	0
10	Jharkhand	1	0
11	Karnataka	3	0
12	Kerala	17	0
13	Madhya Pradesh	0	0
14	Maharashtra	19	7
15	Manipur	0	0

Sl.No.	State/Union Territory	No. Species	No. Endemic Species
16	Meghalaya	5	0
17	Mizoram	0	0
18	Nagaland	0	0
19	Odisha	27	3
20	Punjab	0	0
21	Rajasthan	0	0
22	Sikkim	0	0
23	Tamil Nadu	3	0
24	Telangana	0	0
25	Tripura	0	0
26	Uttar Pradesh	0	0
27	Uttarakhand	0	0
28	West Bengal	23	2
29	Andaman & Nicobar	14	0
30	Chandigarh	0	0
31	Dadra Nagar Haveli, Daman & Diu	3	0
32	Delhi	0	0
33	Jammu & Kashmir	0	0
34	Ladakh	0	0
35	Lakshadweep	15	2
36	Puducherry	3	0

**Endemism :** Twelve species are reported to be endemic to India.

**Habitat :** Gastrotrichs are free-living meiofaunal dwellers inhabiting spaces between the sediment grains of marine, freshwater (Paps and Riutort, 2012) and soil ecosystems (Bharti and Kumar, 2019).

**Ecological Significance :** Gastrotrichs are significant constituents of aquatic ecosystems, ranking in third after nematodes and copepods in marine settings and ranking among the top five phyla in freshwater environments (Todaro *et al.*, 2006).

**Human Significance :** According to Barinova (2022), 27 species of gastrotrichs are considered as indicators of saprobity and trophic state of aquatic environments.

**Threatened species :** Gastrotrich species from India have not been formally assessed for the IUCN (International Union for Conservation of Nature) Red List of Threatened Species.

**Protected Species as per WPA (2022) :** Gastrotrichs are microorganisms and are not typically listed under schedules of wildlife protection acts or regulations, including the Wildlife Protection Act of India (2022).

**Species under CITES :** Indian Gastrotrichs are not listed under any appendices of CITES.

**Invasive alien species :** Gastrotrichs are generally not reported to be invasive in Indian continent, as many of them are considered to be cosmopolitan, meaning they are widely distributed across different regions of the world, including India.

**Gap areas :** Due to the lack of specialists, the Current knowledge on the biology, life cycle and distribution of many semi-planktonic gastrotrichs is very limited (Minowa and Garraffoni, 2021). Even though there are a number of gastrotrich species reported from India, many reported species are in need of re-description due to insufficient information (Chatterjee *et al.*, 2019).

### Systematic list

Phylum GASTROTRICHA Metschnikoff, 1865

Order CHAETONOTIDA Remane, 1925

Family CHAETONOTIDAE Gosse, 1864

Genus *Aspidophorus* Voigt, 1903

1. *Aspidophorus marinus* Remane, 1926.

Genus *Chaetonotus* Ehrenberg, 1830

2. *Chaetonotus (Captochaetus) gastrocyaneus* Brunson, 1950
3. *Chaetonotus (Chaetonotus) brevispinosus* Zelinka, 1889
4. *Chaetonotus (Chaetonotus) elegans* Konsuloff, 1921
5. *Chaetonotus (Chaetonotus) formosus* Stokes, 1887
6. *Chaetonotus (Chaetonotus) similis* Zelinka, 1889
7. *Chaetonotus (Chaetonotus) vulgaris* Brunson, 1950
8. *Chaetonotus (Hystricochaetonotus) acanthophorus* Stokes, 1888
9. *Chaetonotus (Hystricochaetonotus) anomalus* Brunson, 1950
10. *Chaetonotus (Hystricochaetonotus) longispinosus* Stokes, 1887
11. *Chaetonotus (Hystricochaetonotus) novenarius* Greuter, 1917
12. *Chaetonotus (Hystricochaetonotus) octonarius* Stokes, 1887
13. *Chaetonotus (Hystricochaetonotus) spinulosus* Stokes, 1887
14. *Chaetonotus (Marinochaetus) apolemmus* Hummon, Balsamo & Todaro, 1992
15. *Chaetonotus (Schizochaetonotus) atrox* Wilke, 1954
16. *Chaetonotus (Schizochaetonotus) schultzei* Metschnikoff, 1865
17. *Chaetonotus (Wolterecka) caudalspinosus* Visveswara, 1964
18. *Chaetonotus (Zonochaetus) sextospinosus* Visveswara, 1964
19. *Chaetonotus (Zonochaetus) trichostichodes* Brunson, 1950
20. *Chaetonotus apolemmus* Hummon, Balsamo & Todaro, 1992
21. *Chaetonotus laterospinosus* Visveswara, 1964
22. *Chaetonotus monobarbatus* Visveswara, 1964
23. *Chaetonotus* sp.
24. *Chaetonotus tachyneusticus* Brunson 1948
25. *Chaetonotus trianguliforme* Visveswara, 1964
26. *Chaetonotus triradiatus* Rao, 1991

Genus *Halichaetonotus* (Remane, 1936) Schrom, 1972

27. *Halichaetonotus euromarinus* Hummon & Todaro, 2010
28. *Halichaetonotus* sp.

Genus *Ichthydium* Ehrenberg, 1830

29. *Ichthydium (Furfulichthys) monolobum* Brunson, 1950
30. *Ichthydium (Ichthydium) auritum* Brunson, 1950
31. *Ichthydium (Ichthydium) minimum* Brunson, 1950

Genus *Lepidochaetus* Kisielowski, 1991

32. *Lepidochaetus zelinkai* Grünspan, 1908

Genus *Lepidodermella* Blake, 1933

33. *Lepidodermella squamata* Dujardin, 1841

Genus *Polymerurus* Remane, 1926

34. *Polymerurus magnus* Visveswara, 1963
35. *Polymerurus nodicaudus* Voigt, 1901

Family DASYDYTIDAE Daday, 1905

Genus *Setopus* Grünspan, 1908

36. *Setopus abarbitus* Visvesvara, 1963

Family NEOGOSSEIDAE Remane, 1927

Genus *Neogossea* Remane, 1927

37. *Neogossea antennigera* Gosse, 1851

Family XENOTRICHULIDAE Remane, 1927

Genus *Heteroxenotrichula* Wilke, 1954

38. *Heteroxenotrichula subterranea* Remane, 1934

Genus *Xenotrichula* Remane, 1927

39. *Xenotrichula intermedia* Remane, 1934

40. *Xenotrichula laccadivensis* Rao, 1991

41. *Xenotrichula* sp.

42. *Xenotrichula tentaculata* Rao & Ganapati, 1968

43. *Xenotrichula velox* Remane, 1927

Order MACRODASYIDA Remane, 1925 (Rao & Clausen, 1970)

Family CEPHALODASYIDAE Hummon & Todaro, 2010

Genus *Cephalodasys* Remane, 1926

44. *Cephalodasys caudatus* Rao, 1981

45. *Cephalodasys turbanelloides* Boaden, 1960

Genus *Mesodasys* Remane, 1951

46. *Mesodasys hexapodus* Rao & Ganapati, 1968

Genus *Paradasys* Remane, 1934

47. *Paradasys lineatus* Rao, 1980

48. *Paradasys littoralis* Rao & Ganapati, 1968

Genus *Pleurodasys* Remane, 1927

49. *Pleurodasys helgolandicus* Remane, 1927

Family DACTYLOPODOLIDAE Strand, 1929

Genus *Dactylopodola* Strand, 1929

50. *Dactylopodola indica* Rao & Ganapati, 1968

Family MACRODASYIDAE Remane, 1926

Genus *Macrodasys* Remane, 1924

51. *Macrodasys andamanensis* Rao, 1993

52. *Macrodasys caudatus* Remane, 1927

53. *Macrodasys hexadactylis* Rao, 1970

54. *Macrodasys indicus* Govindankutty & Nair, 1969

55. *Macrodasys lakshadweepensis* Hummon, 2008

56. *Macrodasys waltirensis* Rao & Ganapati, 1968

Genus *Urodasys* Remane, 1926.

57. *Urodasys viviparus* Wilke, 1954

Family PLANODASYIDAE Rao & Clausen, 1970

Genus *Crasiella* Clausen, 1968

58. *Crasiella indica* Rao, 1981

Genus *Planodasys* Rao in Rao & Clausen, 1970

59. *Planodasys littoralis* Rao, 1993

60. *Planodasys marginalis* Rao & Clausen, 1970

Family THAUMASTODERMATIDAE Remane, 1927

Genus *Acanthodasys* Remane, 1927

61. *Acanthodasys aculeatus* Remane, 1927

Genus *Diplodasys* Remane, 1927

62. *Diplodasys remanei* Rao & Ganapati, 1968

Genus *Pseudostomella* Swedmark, 1956

63. *Pseudostomella andamanica* Rao, 1993

64. *Pseudostomella cheraensis* Priyalakshmi, Menon & Todaro, 2007  
 65. *Pseudostomella indica* Rao, 1970  
 66. *Pseudostomella malayica* Renaud-Mornant, 1967  
 67. *Pseudostomella roscovita* Swedmark, 1956  
 Genus *Tetranchyroderma* Remane, 1926  
 68. *Tetranchyroderma cirrophorum* Lévi, 1950  
 69. *Tetranchyroderma hystrix* Remane, 1926  
 70. *Tetranchyroderma indicum* Rao & Ganapati, 1968  
 71. *Tetranchyroderma littorale* Rao, 1981  
 72. *Tetranchyroderma massiliense* Swedmark, 1956  
 73. *Tetranchyroderma megastomum* Remane, 1927  
 74. *Tetranchyroderma paralittorale* Rao, 1991  
 75. *Tetranchyroderma suecicum* Boaden, 1960  
 76. *Tetranchyroderma swedmarki* Rao & Ganapati, 1968  
 77. *Tetranchyroderma tentaculatum* Rao, 1993  
 78. *Thaumastoderma heideri* Remane, 1926  
 Family TURBANELLIDAE Remane, 1925, sensu Hummon, 1982  
 Genus *Paraturbanella* Remane, 1927  
 79. *Paraturbanella boadeni* Rao & Ganapati, 1968  
 80. *Paraturbanella brevicaudata* Rao, 1991  
 81. *Paraturbanella mesoptera* Rao, 1970  
 82. *Paraturbanella palpibara* Rao & Ganapati, 1968  
 Genus *Turbanella* Schultze, 1853  
 83. *Turbanella aminensis* Rao, 1991  
 84. *Turbanella bengalensis* Rao & Ganapati, 1968  
 85. *Turbanella indica* Rao, 1981

## References

- Annandale, N. 1907. The fauna of brackish ponds at Port Canning, Lower Bengal. I. *Rec. Ind. Mus.*, **1**: 35-43.
- Barinova, S. and Dyadichko, V. 2022. Zoological water quality indicators for assessment of organic pollution and trophic status of continental water bodies. *Transylvanian Review of Systematical and Ecological Research*, **24(3)**: 65-106.
- Bharti, D. and Kumar, S. 2019. First record of *Lepidochaetuszelinkai* (Gastrotricha, Chaetonotida) from India. *Rec. zool. Surv. India*, **119(4)**: 474-479.
- Chatterjee, T. & Antonio Todaro, M. (2021). An annotated checklist of the chaetonotidan Gastrotricha from India. *Zootaxa*, **5027(3)**: 332-350. <https://doi.org/10.11646/zootaxa.5027.3.2>
- Chatterjee, T., Priyalakshmi, G. and Todaro, M. A. 2019. An annotated checklist of the macrodasyidan Gastrotricha from India. *Zootaxa*, **4545(4)**: 495-510.
- Dhanapathi, M.V.S.S.S. 1976. Taxonomic notes on some gastrotrichs from coastal Andhra Pradesh. *Mem. Soc. Zool. Guntur*, **1**: 76-78.
- Harkal, A.D. and Mokashe, S.S. 2015. An assessment of periphytic fauna of Kagzipura Lake, District Aurangabad, Maharashtra, India. *Journal of Basic Sciences*, **1**: 34-38.
- Harkal, A.D. and Mokashe, S.S. 2013. Record of two species of Gastrotricha from littoral epiphytic habitat of Kagzipura Lake, Aurangabad, Maharashtra, India. *Research and Reviews: Journal of Ecology and Environmental Sciences*, **1(1)**: 27-29.
- Minowa, A.K. and Garraffoni, A. R. 2021. Seek and you shall find: new species of the rare genus *Ornamentula* (Gastrotricha: Chaetonotida) and first record outside of type-locality. *Zoologia*, **38**: 1-9.

- Naidu, K.V. 1962. Three species of gastrotrichs from fresh waters of Cuddapah, India. *Ann. Mag. nat. Hist. N.S.*, **5(13)**: 1-4.
- Naidu, K.V. and Rao, G.C. 2004. Gastrotricha. In: *Fauna of India and the adjacent countries*. Zoological Survey of India, Kolkata, pp. 169.
- Paps, J. and Riutort, M. 2012. Molecular phylogeny of the phylum Gastrotricha: New data brings together molecules and morphology. *Mol. Phylogenetics Evol.*, **63(1)**: 208-212.
- Purushothaman, J. 2017. Gastrotricha. Chapter 8. In: *Chandra, K., Gopi, K.C., Rao, D.V., Valarmathi, K. & Alfred, J.R.B. (Eds.), Current Status of Freshwater Faunal Diversity in India*. Published by the Director, Zoological Survey of India, Kolkata, pp. 8115–125.
- Rao, G.C. 1969. The marine interstitial fauna inhabiting the beach sands of Orissa coast. *Journal of Zoological Society of India*, **21**: 89–104.
- Rao, G.C. 1975. The interstitial fauna in the intertidal sands of Andaman and Nicobar group of islands. *J. Mar. Biol. Assoc. India*, **17(2)**: 116–128.
- Rao, G.C. 1989. Interstitial Meiofauna. In: *State Fauna Series 1. Fauna of Orissa*. Zoological Survey of India, Calcutta, pp. 20–32.
- Rao, G. C. 1991. Meiofauna. In: *State Fauna Series 2. Fauna of Lakshadweep*. Zoological Survey of India, Calcutta, pp. 220.
- Rao, G. C. 1993. Littoral meiofauna of little Andaman. *Rec. zool. Surv. India*, **155**: 1-120.
- Sanyal, A.K., Alfred, J.R.A., Venkatraman, K., Tiwari, S.K. and Mitra, S. 2012. Status of Biodiversity of West Bengal. Published by Director, Zoological Survey of India, Kolkata, 1–969.
- Sharma B.K. and Sharma S. 1990. On some Freshwater Gastrotricha from N.E. Region. *Rec. zool. Surv. India*, **86**: 211–215.
- Sharma, B.K. 1980. Taxonomic notes on some freshwater Gastrotricha from West Bengal, India. *Hydrobiologia*, **70**: 265–267. <https://doi.org/10.1007/BF00016769>.
- Sharma, B. K. 1987. Gastrotricha (Freshwater). In: *Fauna of Orissa. State Fauna Series 1, Zoological Survey of India, Calcutta*, pp. 319–322.
- Sharma, B.K. and Sharma, S. 1987. On species of genus *Lepadella* (Eurotatoria Monogononta: Colurellidae) from North-Eastern India, with remarks on Indian taxa. *Hydrobiologia*, **147**: 15-22.
- Sharma, S. and Sharma, B.K. 2008. Zooplankton Diversity in Floodplain Lakes of Assam. *Records of the Zoological Survey of India Occasional Paper*, No. **290**: 1–307.
- Todaro, M.A., Sibaja-Cordero, J.A., Segura-Bermúdez, O.A., Coto-Delgado, G., Goebel-Otárola, N., Barquero, J.D., Cullerell-Delgado, M. and Dal Zotto, M. 2019. An introduction to the study of Gastrotricha, with a taxonomic key to families and genera of the group. *Diversity*, **11(7)**: 117.
- Todaro, M.A., Telford, M.J., Lockyer, A.E., Littlewood, D.T.J. 2006. Interrelationships of the Gastrotricha and their place among the Metazoa inferred from 18S rRNA genes. *Zoologica Scripta*. **35**: 251–259.
- Visvesvara, G. 1963. On some Gastrotricha from India with description of two new species. *Annals and Magazine of Natural History*, **6**: 435–443. <https://doi.org/10.1080/00222936308651379>,
- Visvesvara, G. 1964. On some Gastrotricha of genus *Chaetonotus* from India. *Annals and Magazine of Natural History*, **7**: 209–216. <https://doi.org/10.1080/00222936408651460>
- Visveswara, G. 1963. On some Gastrotricha from India with description of two new species. *Ann. Mag. nat. Hist.*, **6(13)**: 435-443.